THE NATURE OF MOOD:

DEVELOPMENT OF A THEORETICAL MODEL

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Running Head: Mood Theory

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Abstract

The present paper provides a conceptual basis for the examination of mood in sport. The nature of the mood construct is discussed with reference to related constructs, affect and emotion. A conceptual model is presented which proposes that certain mood dimensions interact to influence behavior. Depression is proposed to be the most important mood dimension, influencing the intensity of mood responses, the interrelationships among other mood dimensions, and moderating mood and performance relationships for anger and tension. It is hoped that the conceptual model will help guide applied interventions and will act as a catalyst for future research.

It is generally accepted that the use of applied interventions in sport psychology should be underpinned by sound theoretical principles. The psychology of mood and its relationship with athletic performance has received extensive research attention over the past twenty-five years (see LeUnes & Burger, 1998; Renger, 1993; Rowley, Etnier, Landers, & Kyllo, 1995; Terry, 1995). However, many questions about the nature of the mood construct remain unanswered. For example, it is rare in the literature for a clear conceptualization of mood to be presented, especially one that distinguishes mood from related constructs such as emotion and affect. Also, there is a paucity of theory regarding mood-performance relationships. The purpose of the present paper is to provide a definition of mood, to examine the nature of different models of mood, and to present a theoretical framework to explain how mood dimensions interact to influence athletic performance.

Toward a definition of mood

Integral to the study of mood and performance relationships is a clear definition of the mood construct. An established definition is important to ensure that there is a consensus among researchers about the construct under consideration. Given the volume of research, it is surprising that a generally agreed definition of the mood construct is absent from the literature. Indeed in several frequently-cited review articles no definition of the mood construct was provided at all (Renger, 1993; Rowley et al., 1995; Terry, 1995). It should not be surprising that inconsistent conceptualizations of mood have resulted in inconsistent conclusions about mood-performance relationships. For example, Renger (1993) conceptualized mood as a relatively enduring construct and proposed that mood is a poor predictor of performance. Contrastingly, Terry (1995) viewed mood as a transitory construct and proposed that mood is an effective predictor of performance when certain conditions are met.

Recent research in general psychology has attempted to distinguish mood from related constructs such as emotion and affect (Parkinson, Totterdell, Briner, & Reynolds, 1996). Parkinson et al. suggested that the term affect generally refers to evaluative feelings covering a wide range of psychological constructs including mood and emotion. This infers that mood and emotion are subcomponents of affect. Parkinson et al. further proposed that it is possible to make a relatively consistent distinction between mood and emotion based on their intensity, duration, and the specificity of their antecedents. Emotions are proposed to be relatively brief but intense experiences activated by cognitive appraisal of situational factors. Moods are proposed to be less intense but more prolonged experiences which relate to the individual rather than the situation. This distinction, although a useful starting point, may become blurred in some research environments including sport.

The intensity dimension is problematic in sport because both mood and emotion can represent very intense responses. For example, two athletes may experience intense anger before competition. Athlete A may be feeling generally angry but is unable to attribute this anger to a specific antecedent (mood), whereas Athlete B may be angry as a consequence of an argument with her coach (emotion). In this example, it is not possible to distinguish mood from emotion on the basis of the intensity of the response. It is also difficult to differentiate mood and emotion in sport based on the duration of the response. Prapavessis and Grove (1994) reported that mood, supposedly the more prolonged experience, fluctuated significantly from one hour before competition to 15 minutes before competition, whereas Hassmén and Blomstrand (1995) found that the intensity of emotional responses to competition remained stable over a period of two hours.

The differentiation of mood from emotion in terms of the specificity of the antecedent is also problematic in sport. Parkinson et al. (1996) proposed that the relationship between

general feeling states (mood) and reaction to situational factors (emotion) is transactional in nature. A transactional relationship would infer that mood contributes to the interpretation of, and reaction to, a situation and the subsequent emotional experience in turn contributes to mood. This is exemplified by a tennis player, already feeling moderately tense, who becomes very tense as a consequence of finding out that her opponent has won her previous two tournaments. The increased tension is a result of information about an opponent and therefore could be labeled emotion. However, the search for environmental information associated with perceptions of threat is characteristic of pre-existing tension and therefore the underlying mood can be seen to have acted as a catalyst for the emotional response. The transactional nature of the process suggests that mood influences cognition and that emotional responses to specific situations continue to reinforce or modify the intensity of the underlying mood.

The distinction between emotion and mood is further blurred when the response set of the measure is considered. Researchers of mood in sport have tended to use either the response set, "How have you been feeling over the past week including today" (e.g., Morgan, 1980) or the response set, "How do you feel right now"(e.g., Terry, 1995). The latter response set does not rely on recall of mood, but quantifies mood at the time of assessment. Given the ephemeral nature of mood and the transactional relationship between mood and emotion, it may be difficult for respondents to distinguish current mood from mood experienced in other situations stored as memory. Recall of mood is proposed to be influenced by mood at the time of recall (Bower, 1981) and important events (Strongman & Russell, 1986). For example, research has found that depressed mood is associated with a tendency to draw information from memory which is negative, and therefore recall situations where performance was poor (Bower, 1981, Smith & Petty, 1995).

The following example highlights the importance of choosing an appropriate response set. A high score on the vigor scale using the response set, "How have you been feeling over the last week including today" can be interpreted in a number of different ways. First, it may indicate that the individual has been feeling vigorous for the whole week. Second, it may reflect feeling extremely vigorous early in the week but only somewhat vigorous at the time of reporting. Third, it may be a consequence of feeling extremely vigorous at the time of reporting but only somewhat vigorous early in the week. It appears logical that the mood measure should reflect the true feelings from which predictions are to be made.

Therefore, it follows that response set influences the nature of the measure and hence research using the "past week including today" response set assesses a different dimension of the mood construct than research using the "right now" response set. Little acknowledgment of this conceptual difference has previously been made in the sport psychology literature. It is suggested that if a researcher wishes to assess mood over the week leading to competition, perhaps to clarify understanding of the nature of pre-performance mood changes, then multiple measures of mood using a "right now" response set should be taken.

In summary, it appears that when "right now" feelings are assessed just prior to competition it is very difficult to distinguish whether mood or emotion has been measured. However, a general definition of mood might be "a set of feelings, ephemeral in nature, varying in intensity and duration, and usually involving more than one emotion". A key element of this definition is that mood and emotion are part of the same conceptual framework and a clear distinction is not always possible. At the specific level, it is suggested that mood comprises an evaluative component, such as the degree to which the mood is perceived as pleasant, and an arousal component, characterized by varying degrees of activity.

General models of mood

The number and nature of the dimensions of the mood construct is a point of contention in the literature. Different researchers have proposed that mood can be best understood either through a number of specific dimensions (Morgan, 1980) or in broad generic terms (Crocker & Graham, 1995). Research to examine mood and performance relationships in sport has typically conceptualized mood through the six dimensions assessed by the Profile of Mood States (POMS: McNair, Lorr, & Droppleman, 1971) whereas research to examine emotion and affect in sport has typically used the two-dimensional Positive and Negative Affect Scale (PANAS: Watson, Clarke, & Tellegen, 1988). It should be emphasized that the POMS and the PANAS are not in competition and that the best choice of measure depends upon the precise nature of the research question.

The rationale originally cited by researchers for using the POMS to investigate mood-performance relationships was its proposed psychometric integrity. After Morgan (1980) popularized the use of the POMS by identifying a link between successful athletic performance and an iceberg mood profile, combining above average vigor with below average anger, confusion, depression, fatigue, and tension, a new research impetus was provided. It is important to recognize that the factor structures of the POMS and the PANAS and the significance of the iceberg profile emerged from a data-driven rather than a theory-driven approach. Research in the area of mood has been characterized not only by a lack of clarity in defining the central construct under investigation but also an absence of theory to explain the influence of mood on performance. The present examination of the nature of mood, the interrelationships among mood dimensions, and their influence upon performance should inform the decision of researchers who are considering whether to conceptualize mood as a number of specific dimensions or two generic constructs.

The nature of positive mood

Watson and Tellegen (1985) argued that, given the strength of intercorrelations among discrete dimensions of positive mood including vigor (typified by feelings of energy, arousal, and alertness) and happiness (typified by feelings of satisfaction and low arousal), positive mood can be summarized as a single construct. However, there is good reason to suggest that vigor is conceptually distinct from other positive mood dimensions such as happiness. Vigor is proposed to be associated with heightened arousal and the production of maximum effort and therefore should facilitate performance. It is suggested that the higher the reported vigor the greater the effort towards successfully attaining performance goals.

Contrastingly, happiness is proposed to be associated with superficial processing of information which can have negative performance effects (Sinclair & Mark, 1992). Happiness is also proposed to increase the accessibility of positive material in the memory and, according to Hirt, Melton, McDonald, and Harackiewics (1996), often leads to the recall of sufficient information to fill cognitive capacity, thereby debilitating performance through attentional overload. In summary, it is suggested that vigor and happiness are independent constructs and have a different influence on performance.

The nature of negative mood

The structure of the PANAS conceptualizes negative mood as a single construct. The rationale for this structure is based primarily on research findings which show that depression (characterized by feelings of personal hopelessness, deficiency, and worthlessness), fatigue (typified by feelings of mental and physical tiredness), confusion (characterized by feelings of

bewilderment and uncertainty) anger (typified by feelings which vary in intensity from mild annoyance or aggravation to fury and rage) and tension (typified by feelings such as nervousness, apprehension, worry, and anxiety) are typically highly intercorrelated (Watson & Clark, 1997; Watson & Tellegen, 1985; Watson et al., 1988).

However, there are at least three reasons for questioning this structure. First, the strength of intercorrelations among discrete mood dimensions appears to be influenced by the intensity of mood responses. For example, in the original validation studies of the POMS, McNair et al. (1971) reported strong intercorrelations for anger, confusion, depression, fatigue, and tension among samples of psychiatric outpatients but relatively weak intercorrelations among samples of students. Notably, the psychiatric outpatient participants reported significantly higher anger, confusion, depression, fatigue, and tension scores than the student participants.

Second, interrelationships among negative mood dimensions in athletic samples appear to be influenced by the presence or absence of depressed mood. Depression is proposed to be characterized by a global negative self-schema (Abramson, Metalsky, & Alloy, 1989; Beck & Clark, 1988; Brown & Manowski, 1993; Rokke, 1993) whereas it is suggested that other mood dimensions do not have the same global influence and may be activated independently. Depressed mood is likely to activate feelings of anger via the frustration of perceiving that personal goals are unattainable; to activate confusion via an inability to stay focused on performance-related cues; to increase reported fatigue as a consequence of depression-related tiredness; and to activate tension as the discrepancy between perceived ability and task difficulty increases. Collectively, it appears likely that depression will act as a catalyst for anger, confusion, fatigue, and tension, and therefore

increase the strength of intercorrelations among them. The reverse may not be true, however, as anger, confusion, fatigue, and tension can be experienced independently of depression.

Third, different dimensions of negative mood have been shown to be differentially related to performance. Research findings show that confusion, depression, and fatigue are consistently associated with debilitated performance. However, research findings for anger and tension indicate that they can be associated with either facilitated or debilitated performance (see Beedie, Terry, & Lane, submitted for publication). Variations in anger and performance relationships can be explained by proposals on the nature of the anger construct made by Speilberger (1991). Speilberger proposed that anger can either be suppressed inwardly and expressed towards the self, or directed externally toward other individuals or objects. Anger which is directed inwardly is proposed to be associated with other negative mood dimensions including confusion, fatigue, and depression. Speilberger suggested that if feelings of anger become engulfed with feelings of depression, there is a tendency to attempt to repress the anger. By logical extension, supressed anger will therefore tend to be debilitative of performance. Contrastingly, anger which is expressed outwardly tends to directed at the source of the original frustration or displaced to another object or person. Although this process would not in itself benefit performance, it may increase the probability of a cathartic effect or of channeling anger into determination to succeed.

Variations in the direction of the tension-performance relationship, and the relationship between tension and other mood dimensions may similarly be explained by considering the nature of the tension construct. Schwarz and Bless (1991) contend that emotional states such as tension serve a functional role by informing an individual about whether conditions warrant action. Tension may indicate that a performance is likely to be below expectations unless action is taken. The extent to which an individual searches for

solutions is influenced by the relative importance of the performance. Where performance is considered to be important, it is suggested that individuals will make greater efforts to reach the desired performance goal. However, the extent to which tension leads to increased motivation may be influenced by its relationship with other mood dimensions. It is suggested that tension should be associated with facilitated performance when it is independent of negative mood dimensions such as confusion, depression, and fatigue. When tension is experienced simultaneously with confusion, depression, and fatigue, it is suggested that confusion will lead to poor concentration, depression will lead to a perception that the task is unattainable, and fatigue will reduce confidence in physical capability to produce effort. In such circumstances, tension should be associated with debilitated performance.

Collectively, it may be concluded that research which investigates the influence of mood on performance where negative mood is conceptualized as a single construct suffers a substantial loss of information. It is suggested therefore that research to examine the nature and influence of precompetition mood on performance would benefit from investigation of the interaction among discrete mood dimensions.

Development of a conceptual model

Figure 1 contains a conceptual model to predict athletic performance from precompetition mood. The basic premise of the model is that mood dimensions interact to influence performance. The model predicts that depressed mood acts as a catalyst for reduced vigor and increased anger, confusion, fatigue and tension, thereby debilitating performance.

In particular, the effects of anger and tension upon athletic performance are proposed to be moderated by depressed mood. A model of moderation infers that relationships between variables hold for one group but not another (Baron & Kenny, 1986). In this case the mood dimensions of anger and tension are proposed to show an inverse relationship with

performance among athletes in a depressed mood but a curvilinear relationship with performance among athletes experiencing no symptoms of depressed mood. The mechanisms by which these effects are proposed to occur are explained below.

It is implicit in the model that the distinction between feeling no symptoms of depression and even a small degree of depressed mood is an important one for an athlete. This proposal is based on research showing that that the norm for athletes is to report no symptoms of depression at all (Terry, submitted for publication). Given that sport populations show a modal score for depression of zero, it is appropriate in the model to dichotomize mood into groups labeled No-depression and Depressed mood. It is acknowledged that this dichotomy is partly a function of the inventory used. The POMS Depression scale contains items which are relatively independent markers of the depression construct, such as “desperate”, “dejected”, and “unhappy”. By contrast, the Hospital Anxiety Depression Scale (HADS: Zigmond & Snaith, 1983) includes items such as “I still enjoy things I used to enjoy” and “I feel cheerful” which infer depression by an absence of happiness, and the item “I feel as I am slowed down” which infers depression from feelings of fatigue. The inclusion on a depression scale of items which actually assess happiness and fatigue increases the probability of depression scores greater than zero.

A central tenet of the model is that the presence of a negative self-schema is likely to be significant in performance terms. Therefore, any direct marker of depressed mood, however marginal, is important. With reference to the POMS-Depression scale which has a maximum score of 52, the numerical difference between 0 and 1 may not reflect the difference conceptually. There may be considerable difference in mindset between individuals who report even minor symptoms of depressed mood and others who report no symptoms. Applying the logic of Thayer, Newman, and McClain (1994) to explain the low

incidence of depression in sport samples, it is possible that sport participants self-regulate depressive thoughts by anticipating the mood-enhancing effects of physical activity. It is suggested that all reports of depression symptoms represent at least a partial inability to self-regulate and therefore individuals who report symptoms of depressed mood should be considered separately to individuals who report no symptoms. It is important to note that the term depressed mood does not infer that group members are clinically depressed but rather that they have reported some symptoms of depression.

Moderating effects of depression upon tension

To appreciate the interactive effects of tension and depressed mood upon athletic performance it is helpful to further consider the mechanisms by which tension influences performance. In the absence of depressed mood, tension should show a curvilinear relationship with performance consistent with optimal level and cue utilization theories. Cue utilization principles predict that tension causes attentional narrowing which facilitates performance if task-irrelevant cues are ignored and sufficient attention is given to relevant cues. If tension increases above an optimum level for the task and/or the individual, performance-relevant cues are also missed and performance declines as a result (Easterbrook, 1959). In the absence of depressed mood, it is suggested that the principal antecedents of tension are perceived goal importance and perceived goal difficulty. Tension may be facilitative of performance if channeled to enhance determination as the individual seeks strategies to deal successfully with the stressors (Schwarz & Bless, 1991).

Depressed mood is proposed to lead to increased tension by reducing perceptions of ability and increasing perceptions of task difficulty. The process of negative self-evaluation engendered by depressed mood is further characterized by a search for information that supports a negative self-image, an increase in tension serves this function. If a task is seen as

having become more difficult the notion that the individual does not have the ability to cope is reinforced. Therefore, depressed mood activates a tension response and then uses the tension response to maintain the depressive self-schema.

In the presence of depressed mood, tension is proposed to be associated with debilitated performance. There are at least two proposed underlying mechanisms to explain this effect. The first is that tension exacerbates the negative effect of depressed mood on effort, whereby the individual perceives that goal attainment is impossible and makes only half-hearted attempts to reach the goal (Bandura, 1990). The second mechanism is through the influence of heightened tension on attentional control as previously described. In summary, it is suggested that depressed mood is associated with increased tension, and that tension and depressed mood combine to debilitate performance.

Moderating effects of depression upon anger

It is suggested that depressed mood influences the intensity of anger responses via the following process. Depressed mood reduces perceived ability which in turn makes perceived goal attainment less likely. If goal attainment is considered important the perceived inability to reach the goal leads to frustration, which leads to anger. Further, a depressive self-schema influences the attributional search for the cause of the frustration and increased anger. The biasing nature of depressed mood will tend to increase attributions of frustration to internal cues such as perceived lack of ability. As a consequence of low perceived ability, efforts at goal attainment appear futile (Cervone, Kopp, Schaumann, & Scott, 1994). Collectively, in the presence of depression, anger will tend to be focused internally, exacerbating feelings of frustration, self-blame and debilitating performance.

In the absence of depressed mood, anger is proposed to show a curvilinear relationship with performance. It appears likely that anger is more readily directed toward a productive course of action in the absence of negative self-thoughts (Schwarz & Bless, 1991). Provided perceptions of ability are maintained, anger may serve to increase determination and effort toward goal attainment. Given that anger is closely associated with heightened arousal, its effect on attentional control should produce a curvilinear relationship with performance by the same mechanisms as for the tension-performance relationship (Easterbrook, 1959). In summary, it is suggested that depression influences the intensity of anger and moderates the relationship between anger and performance.

Effects of depressed mood on fatigue

Fatigue appears to be generally debilitative of performance regardless of the presence or absence of depressed mood. Fatigue will tend to impair the physical capacity to perform and simultaneously reduce self-efficacy perceptions. Hence, good performance from a fatigued athlete would probably occur despite rather than because of the fatigue. Common antecedents of fatigue include inadequate sleep or insufficient rest following intense exercise. However, it is proposed that depressed mood intensifies feelings of fatigue via a search for negative information. Depressed mood predisposes athletes to scan their feelings for information which reinforces a perception of low ability, resulting in an increased sensitivity to sensations of tiredness and a tendency to interpret these sensations of fatigue as semi-permanent states (Cluff, 1991). Therefore, where an individual does not believe they have the personal resources to cope with giving maximal effort, depressed mood may further lower self-efficacy, reduce effort and debilitate performance.

Effects of depressed mood on confusion

Confusion is also proposed to be debilitative of performance regardless of depressed mood, due primarily to attentional inefficiencies and poor information processing. It is suggested though that depressed mood increases the intensity of confusion by introducing attributional patterns associated with depression (Beck & Clark, 1988). For example, research has shown that depressed individuals attribute failure internally despite evidence to the contrary (Beatty & Hewitt, 1995; Rokke, 1993). Depression is proposed to be closely associated with irrational thinking and a determination to maintain a negative self-image. Therefore, reported confusion might be an index of the extent of depression-related cognitions.

Effects of depressed mood on vigor

It is suggested that vigor remains facilitative of performance regardless of the presence or absence of depressed mood. Although the vigor-performance relationship is not affected, depressed mood is proposed to reduce the intensity of vigor. There are at least two potential mechanisms by which this may happen. First, the biasing nature of depressed mood on memory processes restricts the recall of information that contradicts the negative self-schema. Therefore, previous experiences that are recalled are of failure and poor performance, which may serve to reduce perceptions of vigor. Second, individuals in a depressed mood find it difficult to justify to themselves that they are experiencing feelings of alertness and high energy. Such feelings are downplayed and successful outcomes are attributed externally to the ease of the task rather than to perceived ability (Rokke, 1993). In the absence of depressed mood, the intensity of vigor is proposed to be related to perceptions of success or failure. In such cases, vigor reflects perceived self-efficacy and therefore is highly influenced by performance accomplishments (see Bandura, 1990).

In summary, vigor is proposed to lead to facilitated performance through increased effort. This relationship is proposed to remain stable regardless of depressed mood. However, depressed mood is associated with reduced vigor and therefore the facilitative effects upon performance are reduced.

Testing the conceptual model

To examine the model further, it is suggested that four hypotheses are tested. The first hypothesis is that anger, confusion, fatigue and tension will be higher and vigor will be lower among athletes experiencing depressed mood than those experiencing no symptoms of depression. The second hypothesis is that interrelationships among anger, confusion, fatigue, tension and vigor will be stronger for athletes experiencing depressed mood. The third hypothesis is that vigor will facilitate performance and confusion and fatigue will debilitate performance regardless of the presence or absence of depressed mood. The fourth hypothesis is that anger and tension will debilitate performance among individuals reporting symptoms of depression, whereas anger and tension will show a curvilinear relationship with performance among individuals reporting no symptoms of depression. Initial tests of the model have provided strong support for the first two hypotheses and partial support for the latter two hypotheses (Lane & Terry, 1998a, 1998b; Lane, Terry, Karageorghis, & Lawson, 1999).

The model has substantial relevance for the applied practitioner who is interested in the effects of mood on performance. First, the model emphasizes that applied interventions should be directed particularly toward the prevention or reduction of depressed mood. Second, the model suggests that interventions to alleviate even minor symptoms of depressed mood or to enhance self-image may also serve to reduce tension, anger, confusion and fatigue, and boost vigor. Third, it is implicit in the model that, in the absence of depressed

mood, feelings of anger and tension are not necessarily a threat to the quality of an athlete's performance. Fourth, the model provides a theoretical anchor, previously absent from the literature, for researching applied research questions pertaining to mood and sport performance. It is suggested that tests of the conceptual model in a variety of sporting contexts would form a valuable focus for future research.

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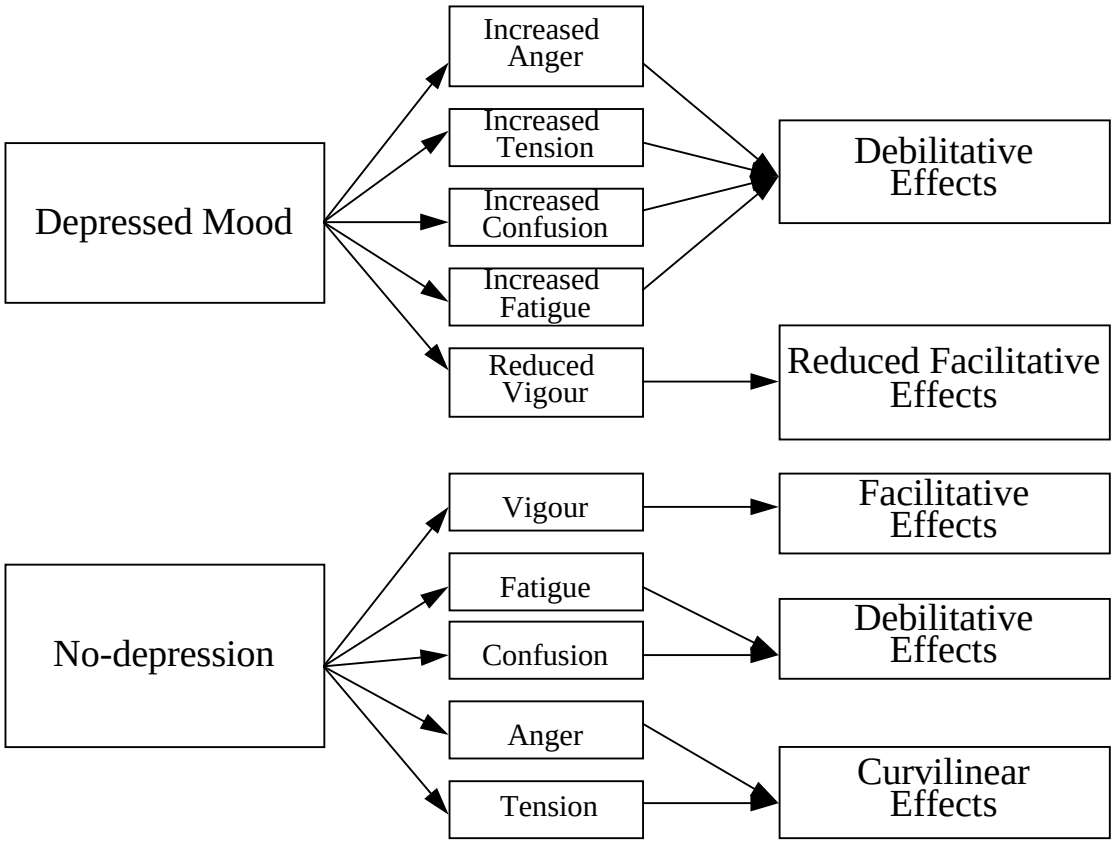
Figure Caption

Figure 1. Conceptual model to predict performance from precompetition mood


Depressed Mood
Increased Anger
Increased Tension
Increased Confusion
Increased Fatigue
Reduced Vigour
Debilitative Effects
Reduced Facilitative Effects
No-depression
Vigour
Fatigue
Confusion
Anger
Tension
Facilitative Effects
Debilitative Effects
Curvilinear Effects